Where to Put Your Stops

by John Sweeney

Stops protecting an initial entry position are like forward passes in football: Three things can happen to you and only one of them is good!

1) You can be taken out of a strong adverse move early (That's good).

2) You can be taken out of a losing trade at the worst possible price (That's bad).

3) You can be taken out of a winning trade by an interim fluctuation (That's catastrophic!).

It's worth keeping in mind how these events come about, although the first is easy. Protection is what stops are supposed to provide. You have presumably set a stop where if reached, adverse price movement outside normal fluctuations is indicated. Your stop is hit and the price keeps on moving past it. You feel pain but you're not mortally wounded.

More often, though, as the price bounces against you, your stop is the first to feel the pain. You may notice that an exit on the close would routinely get you out at a better price—the only exception being when the close and the day's extreme are one and the same. In this second situation, you get nicked for more than you needed to lose in order to exit your position.

Thirdly, the stop is set too close in zeal to hold down losses. Routine price fluctuation touches it and for once your broker performs as advertised. By the end of the day or week the move you were trading is still on but you're off the bandwagon. This is doubly injurious to pride and profit: you've converted a winning trade into a losing trade. Your opportunity cost (foregone winnings) is astronomical and you're also hurting from a cash loss. Your equity is shrunken by the winnings you didn't get and the loss you did take. Avoid this situation like the plague if you want to stay in the game.

I've talked here as though you knew where to put stops. That's true; you should know. I don't know your trading method but I do know, quantitatively, where my stops should be. I know other traders who know where their stops should be. You should probably stay out of the market if you don't know.

Here's how to estimate where your stop should be. Take your trading system's trading record and measure the maximum adverse movement (I call it Maximum Adverse Excursion or MAE, for short) of the price against your position for losing trades and winning trades. If you don't have a system which can define a losing trade or a winning trade by an entry and an exit, I recommend that you get one. If you haven't followed the system, reconstruct what would have happened had you followed it strictly. Please take my word for it—this reconstruction should not be done with pencil and paper because there will be too many "judgment calls" (usually favorable) made in hindsight. Do this with a machine.

Once you have measured this adverse price movement plot the frequency of these excursions for winning trades and for losing trades. You should get two distinct curves as in Chart 1 below. The losing curve should be broad and flat while the winning curve should be narrow, peaked and located close to zero. If you don't get distinctive curves, I suspect your system cannot distinguish winning trades from losing trades. You should consider getting another system.

Assuming you've gotten the right shapes, look at the curve for winning trades. What you have is the first of some essential descriptors of the performance of your system. *This curve tells you that winning trades*

just don't have adverse moves more than "x "points. This gives you the basis for setting your stop. Place it just beyond the point where the worst adverse moves of winning trades go.

There is one problem with this approach. The position of the stop may set you up for more of a loss than your money management guidelines allow. The result is that you cannot trade this particular futures contract with the system you are using. You must either develop a better system (i.e., one with smaller adverse movements) or use the system on a different contract.

Conversely, the system *may* also show that you can limit your losses more than you had expected or increase the number of contracts. For example, my system allows me to trade Tbonds, Tbills, and the currencies with MAE and money management stops of about $600. In sugar, MAE stops are at $300 so I can trade two contracts per position and still stay within my money management limits.

The statistical validity of using MAE stops with your system depends on the number of trades you've gathered for analysis. The general rule of thumb that 30 events, both winners and losers, should be gathered still holds. Still, even if you've done the historical homework, nothing prevents the world or the market from changing in the future. MAE stops may give you a clue to its changing, though, because you will get an excursion far outside your past experience. Hopefully, the excursion will be favorable but, given Murphy's Law and market justice, it won't be. Then you change your system and/or recalculate your MAE.

Once you're using this approach, only one thing should have happened to you when your stop has been hit after entry and it should be good—or, at least, minimally painful!

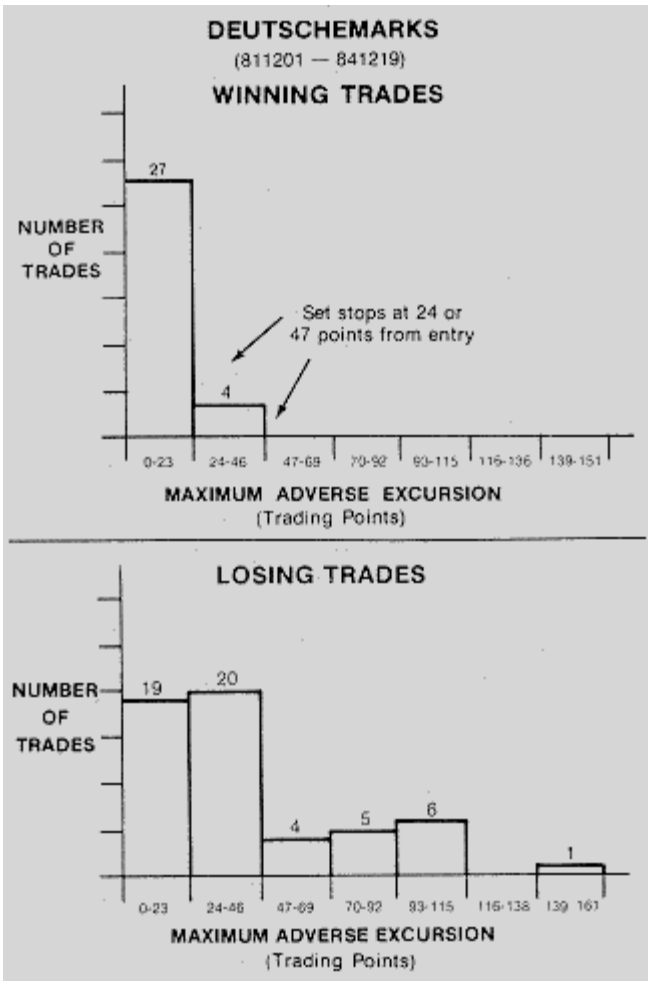

Chart 1:

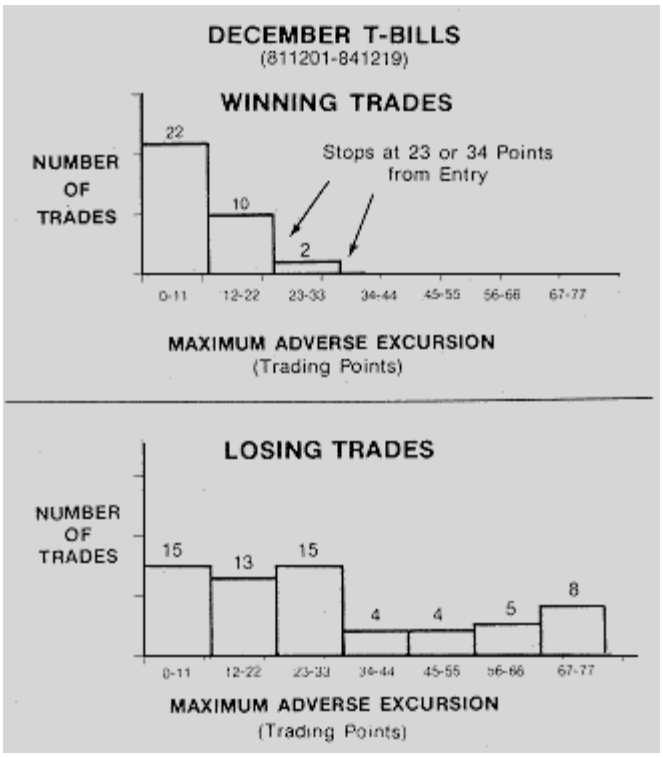

Chart 2: